

IN THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1(Previously Presented). A method of forming a QAM constellation, comprising: arranging constellation points in a non-square grid to achieve a large noise margin, and to allow for fast convergence of blind equalization algorithms, wherein the constellation is at least one of 8QAM constellation and 13QAM constellation.

2(Original). The QAM constellation of claim 1, wherein said points are selected to use low word widths.

3(Previously Presented). A method for improved shell mapping comprising: providing a non-square grid QAM constellation and employing points of said constellation in said mapping, wherein the constellation is at least one of 8QAM constellation and 13QAM constellation..

4-12. Canceled.

13 (Previously Presented). The method according to claim 1, wherein the 8QAM constellation points are selected from

$$\{0, 1, e^{2\pi j/7}, e^{4\pi j/7}, e^{6\pi j/7}, e^{8\pi j/7}, e^{10\pi j/7}, e^{12\pi j/7}\}.$$

14 (Previously Presented). The method according to claim 1, wherein the 8QAM constellation points are selected from

$$\{0, 1, e^{2\pi j/6}, e^{4\pi j/6}, e^{6\pi j/6}, e^{8\pi j/6}, e^{10\pi j/6}, 1 + e^{2\pi j/6}\} - (3 + j\sqrt{3})/16.$$

15 (Previously Presented). The method according to claim 1, wherein the 13QAM constellation points are selected from

$$\{0, \pm 1, e^{\pm 2\pi j/6}, e^{\pm 4\pi j/6}, \pm 1 + e^{2\pi j/6}, \pm \sqrt{3}\}.$$

16 (Currently Amended). The method according to claim 13 3, wherein the 8QAM constellation points are selected from

$$\{0, 1, e^{2\pi j/7}, e^{4\pi j/7}, e^{6\pi j/7}, e^{8\pi j/7}, e^{10\pi j/7}, e^{12\pi j/7}\}.$$

17 (Currently Amended). The method according to claim 13 3, wherein the 8QAM constellation points are selected from

$$\{0, 1, e^{2\pi j/6}, e^{4\pi j/6}, e^{6\pi j/6}, e^{8\pi j/6}, e^{10\pi j/6}, 1+e^{2\pi j/6}\} - (3+j\sqrt{3})/16.$$

18 (Currently Amended). The method according to claim 13 3, wherein the 13QAM constellation points are selected from

$$\{0, \pm 1, e^{\pm 2\pi j/6}, e^{\pm 4\pi j/6}, \pm 1+e^{\pm 2\pi j/6}, \pm \sqrt{3}\}.$$

19(Previously Presented). The method according to claim 16, wherein the shell mapping is performed using a mapping table given by $\{-1, 15, 9 \pm 12j, -4 \pm 15j, -15 \pm 7j\}$, wherein the mapping table is implemented using 5 bits words for I and Q axis.

20(Previously Presented). The method according to claim 17, wherein the shell mapping is performed using a mapping table given by $\{0, 1 \pm j, -1 \pm j, 2, -2, 3+j\}$, wherein the mapping table is implemented using 3 bits for I-axis and 2 bits for Q-axis.

21(Previously Presented). The method according to claim 17, wherein the shell mapping is performed using a mapping table given by $\{-8-2j, 8-2j, 4+5j, -4-9j, -4+5j, 4-9j, 12j, -2j\}$, wherein the mapping table is implemented using 5 bits words for I and Q axis.

22(Previously Presented). The method according to claim 17, wherein the shell mapping is performed using a mapping table given by $\{-8-4j, -2-4j, 4-4j, 5+j, 1+j, 7+j, -2+6j, 4+6j\}$, wherein the mapping table is implemented using 4 bits words for I and Q axis.